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HEARING

BEFORE THE

COMMITTEE ON

LABOR AND PUBLIC WELFARE

UNITED STATES SENATE

NINETY-FIRST CONGRESS

SECOND SESSION

ON

EDWARD E. DAVID, JR., OF NEW JERSEY, TO BE DIRECTOR
OF THE OFFICE OF SCIENCE AND TECHNOLOGY

MONDAY, SEPTEMBER 14, 1970

Printed for the use of the Committee on Labor and Public Welfare



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(II)



NOMINATION

MONDAY, SEPTEMBER 14, 1970

U.S. SENATE,
COMMITTEE ON LABOR AND PUBLIC WELFARE,
Washington, D.C.

The committee met, pursuant to notice, at 11:33 a.m., in room 4232, New Senate Office Building, Senator Ralph W. Yarborough (chairman of the committee) presiding.

Present: Senators Yarborough and Javits.

Staff members present: Leroy Goldman, professional staff member; and Roy H. Millenson, minority staff director.

The CHAIRMAN. The Committee on Labor and Public Welfare will come to order.

This is a hearing on the nomination of Dr. Edward E. David, Jr., of New Jersey to be Director of the Office of Science and Technology, in the Executive Office of the President.

Dr. David, we have your biographical statement. Born in North Carolina in 1925. Bachelor of science degree in electrical engineering from Georgia Tech in 1945, your masters of science and your doctorate of science from Massachusetts Institute of Technology. Presently executive director of research, Communication Principles Division, Bell Telephone Laboratories, Murray Hill, N.J.

Authorship of two books: "Man's World of Sound" and "Waves and the Ear." Professor of electrical engineering at Stevens Institute of Technology and a member of the board of directors of the Summit, N.J., Speech School; adviser to the Carnegie-Mellon University, Pittsburgh, Pa.; adviser to the Georgia Institute of Technology, the University of Rochester, and the Princeton University. That is among the many honors that you have had come to you in recognition of your great scientific knowledge and ability.

You have been adviser at different times for the National Bureau of Standards, the National Science Foundation, the Department of Defense, NASA, the Executive Office of the President, Office of Science and technology.

I will forgo reading the full biographical sketch. I will order the full biographical sketch printed in the record.

(The biographical sketch follows:)

DR. EDWARD E. DAVID, JR.

Dr. Edward E. David, Jr., born in Wilmington, North Carolina, January 25, 1925, received a B.S. degree in Electrical Engineering from Georgia Institute of Technology in 1945, and the S.M. and ScD. from Massachusetts Institute of Technology in 1947 and 1950 respectively. Dr. David is presently Executive Director, Research, Communication Principles Division, Bell Telephone Laboratories, Murry Hill, New Jersey.

He joined the Bell Laboratories in 1950 and worked subsequently in underwater sound and communication acoustics. Since 1963 he has specialized in computing science research, doing research in advanced computing techniques with particular emphasis on "man-machine communication." He has been granted eight patents for his inventions relating to underwater sound, sound localization, and speech processing.

He is the originator of "The Man Made World," a new course for high school students concerning the principles behind technology. The course was developed for the general student and was the result of collaboration by teachers, professors, and engineers from industry. The course is now being taught in about 200 high schools.

He was selected by the Honorary Engineering Society, Eta Kappa Nu, as one of the country's outstanding young engineers in 1954. In 1958 Dr. David received the George M. McCarty Award from the Georgia Institute of Technology as the outstanding young alumnus of the year. In 1959 he was designated by the Summit, New Jersey Junior Chamber of Commerce as its outstanding young man of the year.

The author of many technical articles on communication theory, speech hearing, speech recognition and processing, vocoders, and computing, Dr. David is co-author of two books: *Man's World of Sound and Waves and the Ear*.

He is a member of the National Academy of Sciences, National Academy of Engineering, and is a member of the NAE Council and former Vice-Chairman of its Commission on Education, in addition to serving as Chairman of its Membership Committee. He is a Fellow of the American Academy of Arts and Sciences, the Acoustical Society, the American Association for the Advancement of Science, the Institute of Electrical and Electronics Engineers and is a member of the Association for Computing Machinery and the Engineering Society of Detroit. He is or has been an advisor for the National Bureau of Standards, the National Science Foundation, Department of the Post Office, Health, Education, and Welfare, Department of Defense, National Aeronautics and Space Council, and the Executive Office of the President, Office of Science and Technology, and is a former member of the Board of Directors of the IEEE. He serves as an advisor to Carnegie-Mellon University, Georgia Institute of Technology, the University of Rochester, and the Princeton University.

Dr. David is Professor of Electrical Engineering at Stevens Institute of Technology and is a member of the Board of Directors of the Summit, New Jersey Speech School.

Dr. David was married December 23, 1950, to the former Ann Hirshberg of Atlanta, Georgia. They have one child, a daughter, Nancy.

[From "The American Men of Science" 11th Edition]

David, Dr. Edward Emil, Jr. Countryside, Summit, N.J. Physics, Electrical Engineering. Wilmington, N.C. Jan. 25; m. 50; c.l. B.E.E., Ga. Inst. Tech, 45; S.M. & Sc.D. (elec. eng), Mass. Inst. Tech, 50. Asst. electronics res. lab. Mass, Inst. Tech, 46-50; mem. Hartwell Proj, 50; mem. tech. staff, Bell Tel. Labs, 50-54, supvr, 54-56, engr. in charge acoustics res, 56-57, asst. dir. visual & acoustic res, 57-58, Dir, 58-62, comput. & Info. res, 62-65, Exec. Dir. Commun. Sys. Res, 65- Adv. Nat. Sci. Found, 58-61; mem. bd. dirs, Cmn. Eng. Ed, 62-; consult, prosthetic & sensory aids, serv Vet. Admin, 63; Am. Found, Blind & NASA, 64- Eta Kappa Nu award, 54; Anak award, 58. AAAS; fel. Inst. Elec. & Electronics Eng; fel. Acoustical Soc; fel. Audio Eng. Soc; Asn. Comput. Mach; Psychonomic Soc. Microwave techniques; acoustics; communication theory; human communication; psycho-physics; computer usage and organization.

The CHAIRMAN. Now I will order printed in the record the message from the Office of the White House of March 29, 1962, creating the office with Reorganization Plan No. 2 of 1962 prepared in accordance with the Reorganization Act of 1949 signed by John F. Kennedy. I will order that printed in the record together with the plan No. 2, the Office of Science and Technology, Director and Deputy and the transfer of performance of functions.

(The material referred to follows):

[From the Office of the White House Press Secretary, Mar. 29, 1962]

ESTABLISHMENT OF THE OFFICE OF SCIENCE AND TECHNOLOGY

The President's Transmittal Letter to Congress and Excerpt from Reorganization Plan No. 2 of 1962:

To the Congress of the United States:

I transmit herewith Reorganization Plan No. 2 of 1962, prepared in accordance with the provisions of the Reorganization Act of 1949, as amended, and providing for certain reorganizations in the field of science and technology.

Part I of the reorganization plan establishes the Office of Science and Technology as a new unit within the Executive Office of the President; places at the head thereof a Director appointed by the President by and with the advice and consent of the Senate and makes provision for a Deputy Director similarly appointed; and transfers to the Director certain functions of the National Science Foundation under sections 3(a) (1) and 3(a) (6) of the National Science Foundation Act of 1950.

The new arrangements incorporated in Part I of the reorganization plan will constitute an important development in executive branch organization for science and technology. Under those arrangements the President will have permanent staff resources capable of advising and assisting him on matters of national policy affected by or pertaining to science and technology. Considering the rapid growth and far-reaching scope of Federal activities in science and technology, it is imperative that the President have adequate staff support in developing policies and evaluating programs in order to assure that science and technology are used most effectively in the interests of national security and general welfare.

To this end it is contemplated that the Director will assist the President in discharging the responsibility of the President for the proper coordination of Federal science and technology functions. More particularly, it is expected that he will advise and assist the President as the President may request with respect to:

(1) Major policies, plans and programs of science and technology of the various agencies of the Federal Government, giving appropriate emphasis to the relationship of science and technology to national security and foreign policy, and measures for furthering science and technology in the Nation.

(2) Assessment of selected scientific and technical developments and programs in relation to their impact on national policies.

(3) Review, integration, and coordination of major Federal activities in science and technology, giving due consideration to the effects of such activities on non-Federal resources and institutions.

(4) Assuring that good and close relation exist with the Nation's scientific and engineering communities so as to further in every appropriate way their participation in strengthening science and technology in the United States and the Free World.

(5) Such other matters consonant with law as may be assigned by the President to the Office.

The ever-growing significance and complexity of Federal programs in science and technology have in recent years necessitated the taking of several steps for improving the organizational arrangements of the executive branch in relation to science and technology:

(1) The National Science Foundation was established in 1950. The Foundation was created to meet a widely recognized need for an organization to develop and encourage a national policy for the promotion of basic research and education in the sciences, to support basic research, to evaluate research programs undertaken by Federal agencies, and to perform related functions.

(2) The Office of the Special Assistant to the President for Science and Technology was established in 1957. The Special Assistant serves as Chairman of both the President's Science Advisory Committee and the Federal Council for Science and Technology mentioned below.

(3) At the same time, the Science Advisory Committee, composed of eminent non-Government scientists and engineers, and located within the Office of Defense Mobilization, was reconstituted in the White House Office as the President's Science Advisory Committee.

(4) The Federal Council for Science and Technology composed of policy officials of the principal agencies engaged in scientific and technical activities, was established in 1959.

The National Science Foundation has proved to be an effective instrument for administering sizable programs in support of basic research and education in the sciences and has set an example for other agencies through the administration of its own programs. However, the Foundation, being at the same organizational level as other agencies, cannot satisfactorily coordinate Federal science policies or evaluate programs of other agencies. Science policies, transcending agency lines, need to be coordinated and shaped at the level of the Executive Office of the President drawing upon many resources both within and outside of Government. Similarly, staff efforts at that higher level are required for the evaluation of Government programs in science and technology.

Thus, the further steps contained in Part I of the reorganization plan are now needed in order to meet most effectively new and expanding requirements brought about by the rapid and far-reaching growth of the Government's research and development programs. These requirements call for the further strengthening of science organization at the Presidential level and for the adjustment of the Foundation's role to reflect changed conditions. The Foundation will continue to originate policy proposals and recommendations concerning the support of basic research and education in the sciences, and the new Office will look to the Foundation to provide studies and information on which sound national policies in science and technology can be based.

Part I of the reorganization plan will permit some strengthening of the staff and consultant resources now available to the President in respect of scientific and technical factors affecting executive branch policies and will also facilitate communication with the Congress.

Part II of the reorganization plan provides for certain reorganizations within the National Science Foundation which will strengthen the capability of the Director of the Foundation to exert leadership and otherwise further the effectiveness of administration of the Foundation. Specifically:

(1) There is established a new office of Director of the National Science Foundation and that Director, *ex officio*, is made a member of the National Science Board on a basis coordinate with that of other Board members.

(2) There is substituted for the now-existing Executive Committee of the National Science Board a new Executive Committee composed of the Director of the National Science Foundation, *ex officio*, as a voting member and chairman of the Committee, and of four other members elected by the National Science Board from among its appointive members.

(3) Committees advisory to each of the divisions of the Foundation will make their recommendations to the Director only rather than to both the Director and the National Science Board.

After investigation I have found and hereby declare that each reorganization included in Reorganization Plan No. 2 of 1962 is necessary to accomplish one or more of the purposes set forth in section 2(a) of the Reorganization Act of 1949, as amended.

I have found and hereby declare that it is necessary to include in the reorganization plan, by reason of reorganizations made thereby, provisions for the appointment and compensation of the Director and Deputy Director of the Office of Science and Technology and of the Director of the National Science Foundation. The rate of compensation fixed for each of these officers is that which I have found to prevail in respect of comparable officers in the executive branch of the Government.

The functions abolished by the provisions of section 23(b) of the reorganization plan are provided for in sections 4(a), 5(a), 6(a), 6(b), and 8(d) of the National Science Foundation Act of 1950.

The taking effect of the reorganizations included in the reorganization plan will provide sound organizational arrangements and will make possible more effective and efficient administration of Government programs in science and technology. It is, however, impracticable to itemize at this time the reductions in expenditures which it is probable will be brought about by such taking effect.

I recommend that the Congress allow the reorganization plan to become effective.

JOHN F. KENNEDY.

THE WHITE HOUSE, March 29, 1962.

REORGANIZATION PLAN NO. 2 OF 1962

(Prepared by the President and transmitted to the Senate and the House of Representatives in Congress assembled, March 29, 1962, pursuant to the provisions of the Reorganization Act of 1949, 63 Stat. 203, as amended)

CERTAIN SCIENCE AGENCIES AND FUNCTIONS

PART I. OFFICE OF SCIENCE AND TECHNOLOGY

Section 1. *Office of Science and Technology.* There is hereby established in the Executive Office of the President the Office of Science and Technology, hereafter in this Part referred to as the Office.

Sec. 2. *Director and deputy.* (a) There shall be at the head of Office the Director of the Office of Science and Technology, hereafter in this Part referred to as the Director. The Director shall be appointed by the President by and with the advice and consent of the Senate and shall receive compensation at the rate of \$22,500 per annum.

(b) There shall be in the Office a Deputy Director of the Office of Science and Technology, who shall be appointed by the President by and with the advice and consent of the Senate and receive compensation at the rate of \$20,500 per annum. The Deputy Director shall perform such functions as the Director may from time to time prescribe and shall act as Director during the absence or disability of the Director or in the event of vacancy in the office of Director.

(c) No person shall while holding office as Director or Deputy Director engage in any other business, vocation, or employment.

Sec. 3. *Transfer and performance of functions.* (a) There are hereby transferred from the National Science Foundation to the Director:

(1) So much of the functions conferred upon the Foundation by the provisions of section 3(a)(1) of the National Science Foundation Act of 1950 (42 U.S.C. 1862(a)(1)) as will enable the Director to advise and assist the President in achieving coordinated Federal policies for the promotion of basic research and education in the sciences.

(2) The functions conferred upon the Foundation by that part of section 3(a)(6) of the National Science Foundation Act of 1950 (42 U.S.C. 1862(a)(6)) which reads as follows: "to evaluate scientific research programs undertaken by agencies of the Federal Government."

(b) In carrying out the functions transferred by the provisions of section 3(a) of this reorganization plan, the Director shall assist the President as he may request with respect to the coordination of Federal scientific and technological functions and agencies.

(c) The Director may from time to time make such provisions as he deems appropriate authorizing the performance of any of his functions by any other officer, or by any employee or agency, of the Office.

Sec. 4. *Personnel.* The Director may appoint employees necessary for the work of the Office under the classified civil service and fix their compensation in accordance with the classification laws.

* * * * *

(The remainder of Reorganization Plan No. 2 of 1962 concerns the National Science Foundation and Transitional Provisions.)

The CHAIRMAN. I assume, Dr. David, you are familiar with these orders creating the Office.

STATEMENT OF EDWARD E. DAVID, JR., OF NEW JERSEY, NOMINATED TO BE DIRECTOR OF THE OFFICE OF SCIENCE AND TECHNOLOGY

Mr. DAVID. Yes, I am.

The CHAIRMAN. And you have been in an advisory position to this Office in the past? You have been an adviser to this Office in the past.

Mr. DAVID. Yes.

The CHAIRMAN. Now, Mr. David, I have here your financial statement, and you and I have gone over this statement in the past with certain trusts involved and the certain trusts involved in these trust estates. I believe that is your mother's or father's estate.

Mr. DAVID. The estate is the estate of my mother. The trust is my wife's trust.

The CHAIRMAN. And you are trustee of that?

Mr. DAVID. That is correct.

The CHAIRMAN. The investments of that trust are fairly widely diversified in many companies with no one company having overwhelming majority of the investments.

I will ask you the same general question. In your employment in private industry, your work for the Government, your teaching in universities you doubtless live with this question that comes up with highly trained professional men who serve their Government, serve the academic community and also serve in private industry in some capacities as to whether or not there is a conflict of interest.

In studying these records and studying the investments here, do you anticipate any direct conflict of interest?

Mr. DAVID. I do not anticipate any, Senator.

The CHAIRMAN. You do not anticipate any. Your Office is so large and overriding that it seems to me that the ownership of the stocks disbursed has become secondary and minor in your determination of great national issues of how this great scientific knowledge we developed is to be used, how it is to be harnessed and used for the benefit of mankind, how man is to make the scientific knowledge that he has accumulated his servant and not his master.

Mr. DAVID. That is certainly my intent, Senator.

The CHAIRMAN. And you will, I assume, perform the functions of your Office with that in mind.

Mr. DAVID. Absolutely.

The CHAIRMAN. You are there to make this scientific knowledge a servant of mankind, not as a force to let it run wild and make money off of people regardless of the effects on our environment or the effects on the human race.

Mr. DAVID. No, sir.

The CHAIRMAN. Any decision is difficult to make in a position of this kind. It is almost like being President of the United States. On the economic issues you try to do a variety of things for the country, and an investment in one company does not seem to present any conflict of interest. If you foresaw a conflict of interest, I take it you would follow the appropriate action and resign as trustee. I don't know what your powers and responsibilities are, whether you control it or not, but you would make recommendations some way to resolve the conflict?

Mr. DAVID. I certainly would, Senator.

The CHAIRMAN. Thank you, Dr. David.

Any further questions of any member of the staff?

Dr. David, I wish you a very fruitful service for the people of the United States. If you give that beneficial service to the people in the United States, I have faith that it will be beneficial to you, too.

Mr. DAVID. Thank you, sir.

The CHAIRMAN. Congratulations on the great honor that has come to you in this scientific world with so many fine scientists in the

country. I know that that is one of the highest honors that can come to a scientist, to be the Director of that Office of Science and Technology. Congratulations.

Mr. DAVID. Thank you so much, Senator.

The CHAIRMAN. Gentlemen, we will have an executive session Wednesday and this nomination will be considered. Hopefully we will be able to get a quorum. It is always easier on Wednesdays than Mondays.

So I set 10 o'clock Wednesday morning for an executive session.

The full committee is now adjourned until 10 o'clock Wednesday morning at which time we will go into executive session.

The hearing is adjourned.

(Whereupon, at 11:50 a.m., the committee adjourned.)



country. It is now that this is one of the highest honors that can be bestowed
and that it is the highest honor of the State and the Nation.

The President will have an executive session
on Wednesday and the members will be present. Hopefully we will
be able to get a hearing. It is always easier on Wednesday than
Monday.

The bill is now in the hands of the committee for executive session.
The bill is now in the hands of the committee and it is now in the hands of the
committee. The hearing is now in the hands of the committee.

(Wednesday at 11:30 a.m. The hearing is now in the hands of the committee.)



